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European seaports in the Early Modern Age: concepts, methodology and models of analysis

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Résumés

La reconnaissance de l'importance de l'approche comparative dans les études portuaires, dans un contexte européen, comme à un niveau global, semble faire consensus dans le paysage historiographique actuel. L'application pratique de cette perspective demande, cependant, l'existence d'une structure analytique commune. Le but de cet article consiste précisément à présenter quelques réflexions sur des concepts-clés et sur des procédés méthodologiques appuyés sur quelques orientations théoriques considérées comme essentielles. En affirmant l'importance stratégique des ports, notamment des ports de mer, dans la période moderne, on essaiera d'appliquer et de vérifier la pertinence de la grille analytique proposée, dans le contexte des ports européens, pour mieux discuter de l'(in)existence de modèles applicables aux dynamiques portuaires de la période analysée.

The accuracy of comparative studies on seaports is undeniable in a European context, as well as at a global level. This approach requires the existence of a common framework able to produce systematic insights on seaport studies. This essay aims to present some considerations based on a few key-concepts and to propose a possible methodological orientation, sustained by some theoretical guidance. Assuming the strategic importance of seaports in Early Modern Age, the paper will try to apply and check the pertinence of the proposed variables, when applied to European seaports in order to discuss the (in) existence of models in what concerns seaport dynamics in the period under analysis.

Entrées d'index

Mots-clés : études portuaires, concepts, méthodologie, ports de mer européens, Époque Moderne

Keywords : seaport studies, concepts, methodology, european seaports, Early Modern Age

Notes de l'auteur

Previous contributions on this topic can be found in Amélia Polónia, "The Northwestern Portuguese Seaport System in the Early Modern Age", in Bergholm Tapio, Lewis R. Fischer and Elisabetta Tonizzi (coord.), *Making Global and Local Connections: Historical Perspectives on Ports*, Research in Maritime History series n° 35, Newfoundland, International Journal of Maritime History, 2008, p. 113-136 and "Seaports as centres of economic growth. The Portuguese case. 1500-1900", in Richard Unger (coord.), *Shipping Efficiency and Economic Growth. 1350-1800*, Boston/Amsterdam, Brill Academic Publishers. Printing. More recent insights can be checked in *Revista da Faculdade de Letras do Porto - História*, 3rd. series, 9, 2008 in a thematic issue on *Seaport Studies in a Comparative Approach*.

Texte intégral

Analytical framework

- 1 Ports have been, for a long time, focal points of local, regional, national and international economic development and social change. Its projection to the hinterland, and, at the same time, to an extended *vorland*, led seaports history to become a significant field of research to support the study of evolving trade networks, as well as technological and industrial development and social and urban changes. Seaports are no longer studied exclusively as infrastructures or economic centres, but as a complex system, resulting from economic, political, social and cultural forces; the gateways between land and sea, between the hinterland and the *vorland*, a nodal axis with repercussions on the territorial, economic, social and mental structures. They are also active agents in the process of modernization and change, having a role to play in the fields of technological innovation and in the urbanization process.
- 2 The role played by European seaports in the early modern period seems undeniable. They were essential for structuring economic spaces. Their functioning was critical to the efficiency of shipping. The definition of networks of trade and maritime routes, the increasing tonnage of seagoing vessels, the definition of a world economy, everything worked to increase the importance and prominence of maritime activity and the importance of seaports.¹ They became crucial to structure political and economic spaces and essential junctions in supra-regional spaces. The mastery of new nautical techniques, and the building of maritime empires, have also consequently increased the importance and prominence of maritime communication routes, from the coastal to the trans-oceanic circuits.
- 3 As a result of these dynamics, research on seaports history has accomplished, in the last decades, significant improvements all over Europe, even if particularly focused on economic and technological issues. The discussion about the building of seaports during the Early Modern Age is, in fact, an accurate one. During that period, economic hegemonies were contested between city-ports, such as Lisbon, Seville, Antwerp, Amsterdam and London. Connections between Europe and other continents were mostly based on ports,

at the same time that as internal implications of those dynamics were, at the very outset, projected on maritime centers.

4 In fact, the strategic centrality of ports, especially seaports, in the Early Modern Age, has given rise to specific historic phenomena and dynamics that claim for more accurate studies. The world economic context, the concentration of population, plus the centripetal nature of these maritime complexes, certainly generated demographic, social and mental phenomena that clearly set port zones apart from inland areas.²

5 The confluence of international fleets and lucrative trading traffic in key ports also motivated piracy and led to the need for defense, and the construction of military infrastructures. The double exposure of these fronts, to land and sea, made them more vulnerable to epidemic outbreaks. Improvements on health protection infrastructures were also a feature of the internal dynamics of these spaces. Along with this, advances were made in engineering, notably in the 18th century, at the same time as royal authorities realized the importance of investing in infrastructures such as bridges, ports and fortifications.

6 This was also the time when seaports cities played a new role. Besides economic questions, wars, piracy and military events, public hygiene and public health became a major concern, and reasons and justifications for a more accurate intervention of the State in seaport affairs, which the local authorities were no longer able to deal with by themselves. Individuals, local and central authorities proposed, then, simultaneously new ways of interventions, at the same time as engineering offered new technologies to harbor building and infrastructural construction.

7 Different historiographic schools all over Europe have developed studies on these several issues. Comparative studies between Dutch, French, German, English, Italian, Portuguese or Spanish cases are now a space of research to be fulfilled in order to be able to produce an international dialogue.

8 It is a fact that early modern European historiography was centered, in the past decades, on the analysis of port systems and intercontinental seaport nets, paying special attention to the overseas traffic system. This perspective relies on a theoretical conception of the existence of international seaport's hierarchies and thus, tends to be focused on a macro-economical and international analysis. Underlining the analysis of macro-economic spaces, this kind of approach undervalues or even disdains the study of internal dynamics and specific profiles of each seaport. This is, in our understanding, another research line to be explored, as the application of interdisciplinary methodologies to seaport studies.

9 In Portugal, a research project founded by the FCT (Portuguese Foundation for Science and Technology), *Hisportos (POCTI/HAR/ 2407/2000)* running between 2001 and 2005, assumed itself as a debtor of these theoretical concerns. A micro-analytical approach, on the one hand, and a multidisciplinary methodology, on the other hand, emerged as the main pillars of this project. The team elected the North Western seaports from Caminha to Aveiro as research area, and the micro level and the local and regional scale were the methodological perspectives applied to those seaports, aiming to discuss the existence or inexistence of seaport models.

10 The analytical topics dealt, among others, with the geomorphologic features of these ports and their interaction with changing circumstances over time (climatic, geographic, ecological, anthropic ...), the installation and subsequent changes in seaport infrastructure, the relations between seaport areas and both

the *hinterland* and *vorland*, the application of technological innovations associated with hydraulic engineering and the production of scientific knowledge of the territory in cartography, topography, hydrologic plans.

11 These aims led to the constitution of a multidisciplinary team that included historians, archaeologists, geographers, cartographers, engineers and architects. The team's main goal was the development of a research methodology and data gathering, in order to consider the area under study from a multidisciplinary point of view.³ The aim was to consider the social framework of a seaport as a place where particular demographic, professional and social dynamics developed over time and created specific patterns. In order to identify profiles that contributed to the distinction between seaside and rural communities, the team proposed a second project for FCT founding, which was, however, not approved.

12 The same goals and epistemological focus that guided the conception of the *Hisportos* project will also guide the synthetic approach of this paper in its concepts, methodology and models of analysis on seaport studies.

Operative concepts

As an object, a port exists as the result of complex relations between distinct elements of various types: economic, cultural, social, political and geographical. The intensity and level of interrelated causes, effects and relations, are never determined in a unilateral way. The nature of the object can be understood not only through the most important elements that make up the system, but also through the different features of these elements and the relationship between them.⁴

13 In fact, a seaport may be taken as a result of geomorphologic constraints, as the topographical setting and the conditioning factors of change of the coastal rim are both able to influence either specific interventions in the ports, in terms of infrastructure, or the historical dynamics of a single seaport or a complex of seaports. It may also be studied as a harbor, a seaport precinct, built by infrastructural and technical interventions, by the installation and alteration of port infrastructures (as a result of the building or the improving of quays, wharves, breakwaters, jetties, banks, dikes ...), or the construction of sea marks (channel markers, stakes, lighthouses, sails, buoys, flags ...).

14 It may also be studied from the point of view of its accesses (harbor entrances and depths); the construction of defense and communication facilities (forts, bridges, channels, etc.), or even the establishment of administrative and fiscal facilities (warehouses, arsenals, shipyards), or controls (authorities, legislation, technical staff ...). Catching the historical dynamics of each port may imply, either, the study of its connections with the *hinterland* and the *vorland* (transport networks, costs, mobility), as well as the royal and local policies relating to ports, presuming their impact and influence in seaports centrality or eccentricity. Seaports may be studied from a social point of a view, as places where particular demographic, professional and social dynamics, developed in long term, and contributed to create specific patterns and identity profiles, able to distinguish seaside communities from the rural ones.

15 Although the advantages of a multifocal analysis are undeniable, Gordon Jackson, a renowned researcher on seaports history, opened a conference held in Porto, in 2005, with this argument:

Clearly the history of ports is of necessity complicated, and the easiest way to understand complexities is to regard port history as a leading constituent of economic history. So: three topics should be above your bed or on your desk: favorable factor endowments; factors of production: land (resources), labor, capital; knowledge and connections.⁵

16 These astute insights synthesize broader explanations on seaports. But, in which way study seaports in the Early Modern Age? Which theoretical insides and conceptual frame could be applied in such research domains?

17 Some basic concepts, such as seaport system, seaport hierarchies and seaport complementarities could be proposed, seeking to understand the complex relations that developed within the networks of European seaports.

18 According to the concept of seaport system, a port is considered in its complexity as a whole, in its human, social, urban, technical, administrative, and economic dimensions. The suggestion mentioned in Guimera and others is appealing. The concept stresses the need to put forward and evaluate the performances and growth rates of each singular port in the complex of ports, in which it stands as an essential element of the system.⁶

19 It is also necessary to work with the concept of seaport hierarchy. Unequivocal hierarchies, though, do not exist: the parameters by which they are defined will determine the relative standing of a port in relation to all the others. In this approach, we need to produce an analytical grid geared at determining the relative ranking of seaports, based on a number of variables. The first question asked is the way seaports should be compared with each other: through its volume of trade and shipping, its value of trade, or its size and influence?

20 Gordon Jackson states that major ports are essentially commercial ports engaged in long-haul trade covering an extensive region, where a large variety of goods are trafficked, involving large ships and cargoes, and which depends on an extended hinterland. They are usually small in number, but have significant impact; medium ports deal with fewer goods, short-haul trading, and fewer, usually smaller, locally owned ships. They may only be trading coastwise through a major port, and minor ports are, according to the author, responsible for small-scale foreign trade but strong coastal connections, providing support to major ports. Those may also be identified with the so called “unimportant ports”:

those which have a poor or backward hinterland and few external connections; with a small or no share of national imports and exports and, contrary to expectations, a small share of coastal trade, which was also dominated by major ports; with exceptions they owned and built few ships; they had inadequate facilities for larger ships; few warehouses; no comprehensive mercantile community or direct foreign linkages; few industries and small populations; in sum, they had no opportunity for self-generated trade.⁷

21 Even if we admit the concept of seaport hierarchy as an operative one, the question of scale is still to be discussed. A certain port may rank simultaneously at different scales: at a local scale, interconnected with its hinterland, which it serves as a hub of links with broader external spaces through import/export circuits; at an interregional scale, through connections not only with the internal economic dynamics of the country, but also with other spaces in Europe; or in transoceanic circuits, as integral part of European trade routes since the sixteenth century.⁸

22 However, it may be more pertinent to discuss a possible seaport typology, rather than a hierarchy, as put forward by Adrian Jarvis, based on different parameters, such as:

- Ports' main types of traffic: colonial goods, general cargo liners, passengers or bulk imports;
- Ownership or administration model: central government; local or provincial government; statutory trust; joint-stock company, or private;
- Nature of trade: mainly importing, exporting or distributive trade;
- Demographic indicators, depending on capital city ports, metropolitan ports, or wilderness ports;
- Geomorphologic constraints, since they determine the extent of its debt charges;
- Amount of capital debt *per* yard of quay.⁹

23 The economic standing of each port also depends on its main economic profile. Although, traditionally, shipping and cargo transportation were natural indicators of seaport dynamism, it is nowadays important to understand whether we are dealing with a fisheries port, a transportation market, a shipyard, a financial center, a trade center (and, in this case, a local, interregional or international one), or an industrial seaport (for example, the prevalence of canned fish industries in the nineteenth century or the colonial goods factories).

24 Furthermore, the relative ranking of a port in relation to others evolves diachronically, in accordance with geo-economic, political or even logistical contexts, which promote or review the relative standing of each seaport. This seems to be the case of the Mediterranean seaports, such as Genoa or Venice, which importance declined in the Atlantic trade circuits, where global economic dynamics came to be disputed, from the sixteenth to eighteenth centuries. At a micro scale, this also seems to apply to the case of Portugal with regard to the centrality of the Algarve ports in overseas trade circuits in the fifteenth century, and their growing marginality or borderline status in those very circuits in following centuries. Also relevant here is the apparent rise of the Portuguese Northwestern seaports relative to Lisbon in the seventeenth century, issue that arise in a significant number of historical approaches of Portuguese overseas expansion.¹⁰

25 Seaport hierarchies do, then, exist, at a national and international level, and they evolve in the Early Modern Age mostly related to colonial and maritime trade. In fact, although some favored ports expanded in response to pressure from internal business, it was not until the international developments in oceanic trade and shipping in the sixteenth and seventeenth centuries that facilities in old ports were significantly extended, and new ones built. It seems undeniable that the most important ports in a European ranking over a period of time were those which were either a reception platform for colonial merchandise, or a redistribution hub for those products, as well as a financial center. Note for example the case of Genoa and Venice until the fifteenth century, that of Antwerp in the first half of the sixteenth century, and the centrality of Amsterdam and London in the following centuries.

26 The third conceptual premise, which is also a theoretical one, has to do with the existence of inter-port complementarities, without which main seaports would not be able to maintain their position. It leads to another concept: the concept of seaport networks.¹¹ They could be economic and financial

complementarities, woven according to the pattern of merchant networks, sustained by capital transfers, by the placement of agents in trade markets, or by the creation of inter-port but also logistical partnerships. It can be assumed that a large commercial port may depend on several transportation ports, since its naval fleet is insufficient to sustain the maritime trade routes it serves.¹²

27 It is the same for nautical complementarities: large fleets depend on other ports when recruiting their crews, supplied through veritable hotbeds of seamen along the coast, residing in maritime trading posts. For example, in Portugal in the sixteenth century, Porto and Lisbon depended in logistic terms on small or medium seaports, from the North to the South of the Portuguese coastline.¹³ At a European level, the labor force and crews of Amsterdam in the seventeenth century were provided by the German States and Scandinavia.¹⁴

28 These complementarities also arise around shipbuilding. Secondary seaports, at times small-sized ones, sustain shipyards or supply a specialized labor force to sustain shipbuilding in larger shipyard ports. This is the case of Ribeira das Naus in Lisbon, sustained not only by voluntary but also by compulsory recruitment, which forced naval construction officers from all over the kingdom to move to Lisbon under royal orders, on authentic duty commissions.¹⁵ It is also the case of Ribeira do Ouro in Porto: a roll from 1656 proves that 76% of the naval construction officers recorded were originally from the vast *hinterland* of Entre-Douro-e-Minho (area running north from the Douro River to the border with Galicia), covering several municipalities of Porto's rural and maritime *hinterland*.¹⁶

29 The historical importance of these great maritime centers often relied, thus, on local inter-port networks. To understand the standing of each seaport in a certain context, in a precise ranking, it is important to examine all the types of networks and complementarities it establishes on a regional scale, with smaller ports and with its *hinterland*,¹⁷ and not simply that of the economic or strictly commercial connections between the major international ports. In fact, from the viewpoint of logistics, shipbuilding, transport capacity, and availability of navigation technicians, a cosmopolitan port necessarily relies on other ports and on areas where agriculture and crafts are the predominant occupations, without which their dynamism would have been impossible to sustain. This is undeniably the case of Lisbon during the period of overseas expansion or even that of Seville for the Spanish-America maritime route.¹⁸

30 This perspective leads to two assumptions: firstly, these complementarities cannot be separated from the success or failure of a seaport; secondly, the effects of economic growth or economic crisis in a main seaport have repercussions on larger spaces, whether they be the rural *hinterland* or the surrounding satellites seaports. Economic and social repercussions are, in any case, quite relevant. The development of studies on these topics will be essential to understand national and international seaport hierarchies over time.

A model to seaports studies – an essay

31 Seaport studies cannot ignore a multitude of factors that determine, or at least influence, the standing of each port in a ranking. The development of

seaport dynamics is, as we understand it, based on some essential variables, including geographical, economic, political or logistic ones.¹⁹

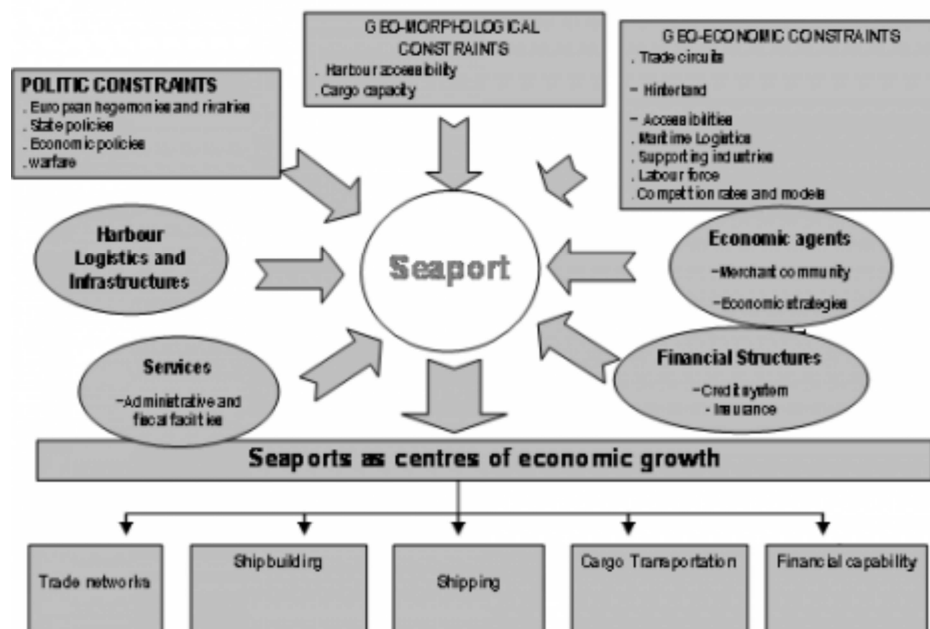
32 Politic constraints, related to European political hegemonies overtime, such as state policies, economic policies, war contexts, influence seaports centrality or eccentricity. The constitution of monopolistic systems, led by a central power (such as in the Portuguese or Spanish case), monopolistic Companies (such as in the case of the British East India Company or the Dutch VOC) or, alternatively, the definition of competition levels between private trade (such as in the Portuguese African and Brazilian trade), also determine the inclusion or exclusion of ports in a given port system and economic network.

33 Geo-economic constraints, including access to trade circuits; the profile of the *hinterland*; maritime logistics (seamen and fleet); supporting industries (rope industry, shipyards, sail industries ...); labor force and level of competition with other seaports; are also variables which interfere with seaport economic dynamics.

34 Geo-morphological constraints such as harbor accessibility and cargo capacity are also important variables. The human and financial variables, such as merchant communities, local economic strategies, investments priorities, the amount of capital available, as well as the availability or unavailability of financial services (credit or insurance services, for instance) are other elements to quest.

35 Influenced by these variables and factors, each seaport develops an internal dynamism measured by indicators: population growth rates, concentration of work force, capital, investments, services, trade companies, relative position in trade networks, shipping, transportation tonnage, merchant fleet or maritime industries productivity ...

Figure 1. Economic Performance of Seaports – a Model



Polónia, Amélia, « Seaports as centres of economic growth. The Portuguese case 1500-1900 » in Richard Ung (coord.), *Shipping Efficiency and Economic Growth. 1350-1800*, Boston/Amsterdam, Brill Academic Publishers. Printing

36 In summary, it is possible to say that the relative ranking of each port in a hierarchy and its access to different trade circuits does not depend exclusively on its own internal dynamics, options and intentions, but is also related with

highly distinct yet major influential factors, among which the following should be noted:

- Geomorphologic constraints, which determine the capacity of certain ports to remain active in long-haul traffic circuits;²⁰
- Global mercantile dynamics and circuits, directly linked to the paths followed by the European overseas empires, involving the main European maritime powers in stage;
- Economic policies, central power control and economic direction, defined according to different political models.

37 Which of these factors are predominant in the definition of a seaport ranking? There is no unique answer: we do think it is variable, according to the several political and economic European models. We will try to check the applicability of these variables in what concerns seaport studies, on an empirical approach, focused on European seaports and mostly on the Portuguese case.

38 We could argue, in a first approach, that the emergence and maintenance of seaports in the Early Modern Age should be explained based on political, military and economic contexts, rather than on specific internal dynamics or geomorphologic constraints. But we have to state that this isn't a general rule that can be applied, either to Portuguese or to the overall European seaports. Let us review a few standing points in the discussion centered on seaports as centripetal centers of development, in the Early Modern Age.

39 The importance of imperial politics from the European nations involved in colonial trade seems undeniable as a factor to the standing of seaports as pivotal centers. The successive European hegemonies and the alternate standing of political and economic entities in the European stage, from the sixteenth to the eighteenth centuries appear, thus, to be highly relevant in the discussion. Colonial leadership ran up from Portugal to Spain, the Dutch Republic, England and, on a different scale and in a different time period, France. We assume that political contexts and strategies are highly relevant in these alternate leaderships. We do not consider inconsequential that France, the most continental state, with a continental capital (Paris), was the last and weakest colonial empire in the Atlantic world until the eighteenth century. In fact, the involvement of the main French maritime towns in overseas navigation and trade during the sixteenth and seventeenth centuries was sustained by the local merchant and maritime communities, rather than by the central power, and depended more on piracy (in the ports of Normandy and Bretagne: Saint-Malo, Brest) and smuggling, (in Nantes or Bordeaux²¹), than on official trade and economic policy led by the French state, even during Richelieu's or Colbert's regencies.

40 At a different level, we assume also that, to a great extent, the presence of a central power or its representatives in a seaport is highly influential to its standing as an economic center. The transfer of economic power from Antwerp to Amsterdam is, in our opinion, a remarkable testimony. Apart from the geomorphologic issues that could explain the transference of their economic centralities, the fact is that whereas Antwerp concentrated in Northern Europe the strong political power of the Habsburgs, Amsterdam was to be the focus of a new political and colonial power: the Dutch Republic, mostly the Netherlands. It became the symbolic and effective capital of a new economic order, and a new political geography, as London was to become in the

seventeenth century. It should also be underlined that almost all of the main seaports and seaport towns are, in fact, capitals – of republican cities (Genoa and Venice), kingdoms (Lisbon and London) republics (Amsterdam). In this context, only Seville, first, and then Cadiz, emerge as main seaports without being political capitals. However, both were chosen for political reasons, and geo-economic strategies.

41 It is true, however, that there are other port models. Hamburg, for instance, is a nodal seaport by European standards, ranked neither as an imperial colonial capital, nor as a primary reception center for overseas products. It was a hub for foreign agents, capitals and merchandise and played a role of operational and logistic center that provided men, ships, capitals and flag to those who, being at war, could not pursue traditional trade connections. The port of Hamburg was, simultaneously, an economic and financial center, and its vitality and wealth depended over time on foreign capitals and economic agents, even if its domestic dynamics were also quite relevant.²²

42 As a matter of fact, however, politics are intimately linked to trade and can lead to commercial or financial collaboration or rivalry, to political conflicts and even warfare, which directly affects and redefines seaports networks and hierarchies.²³ One can point out, again, the example of the strategic primacy of Hamburg during the conflicts between the Habsburgs and the Dutch Republic, or its fundamental role, as well as of Bordeaux or Livourne, during the Anglo-French wars and Napoleon's Continental blockade, as highlighted by Silvia Marzagalli.²⁴

43 Monopolistic systems and theories also led to the emergence of principal ports at the detriment of others. In the Portuguese case, the political-administrative status of the several Portuguese ports is different from that of Lisbon, which immediately ranks them differently, both in terms of centers of power, and of access to the dynamics of colonial affairs. Lisbon was the kingdom's capital since the Middle Ages, and, since the sixteenth century, the capital of a vast overseas empire. This fact was to determine its central position in the monopolistic trade circuits. The leadership of Lisbon is unquestionable and proven, owing both to the concentration of political infrastructures and a high population density, unparalleled or even incomparable at the national level. Lisbon was in the sixteenth and seventeenth centuries one of the largest city ports in Europe, comparable with the great cities of the time. In the mid-sixteenth century it counted about 100 000 inhabitants, and about 165 000 in 1620 while Seville hosted a population of 120 000.²⁵

44 Porto, the second city in the kingdom, one of the Northwestern seaports, was a district capital and highly relevant in the kingdom's domestic life. Its population was however, in 1620, lower than 20 000 inhabitants. It was a central nucleus of the NorthWest region, with traditional links to the Mediterranean and the North of Europe, whose port area developed strong maritime, commercial and financial vitality since medieval times. Nevertheless, it lost part of its relevance during the sixteenth century, largely owing to a monopolistic overseas trade policy, which involved gold and oriental drug trades. However, its shipyards, renowned for their vitality and quality, built many of the ships destined to sail the Indian Route, and the city contributed, together with other Northwestern ports, to the crews that sailed the Cape Route. The difference between Porto and Lisbon is, thus, an example of the argument defended here. Porto did not ascend to a relevant position in the Cape Route mostly because of a monopolistic and directed overseas trade policy that gave notorious prevalence to the Lisbon merchant community. On

the contrary, in the sixteenth and seventeenth centuries, Porto held a leading position in the Brazilian sugar trade, in which direction from central power was not needed, giving some leeway to individual initiative.²⁶ Even in England, in spite of an economic system quite different from the Portuguese colonial trade, competition between English ports in the seventeenth century was a struggle for and against the privileges or monopolies of London.²⁷

45 Focusing on economic politics, the mercantile policies of Italian cities cannot be compared with the monopolistic trade of the Portuguese or Spanish crowns, nor with the central power on overseas trade and shipping in England, mostly since Elisabeth I (reflected to a large extent in the Navigation Acts), nor the economic policy implemented by the Dutch Republic (reflected in the monopolistic action of trade companies). Each of these measures had different impacts on European seaports' development as economic centers. Both Britain and Holland had established monopolies in the Asian trade circuits, through the *East India Company* (EIC) and *de Verenigde Oostindische Compagnie* (VOC). However, whereas the EIC was limited by statute to the port of London, the VOC, which had its headquarters in Amsterdam, established branches (chambers) in a selection of Dutch ports from the very beginning.²⁸ This fact is highly significant in its implications on the economic wealth rates of those seaports.

46 On the other hand, East India Companies were founded in many other countries, generally in leading ports, but no other country matched the powerful position of the EIC and the VOC in their trade network. For example, the Portugal did not. Why? Was it because of frequent warfare? We do not think so: Britain and the Dutch Republic also experienced similar situations, namely in the Anglo-Spanish and Anglo-Dutch wars. Could it be due to the failure of its major ports? The monopolistic status of its colonial economy? The lack of entrepreneurial initiatives and the dominion of the trade by parasitic circles, such as the aristocratic ones?²⁹ There is no unequivocal answer to these questions, but they suggest other factors which should be discussed: the economic features of each seaport, including its *hinterland* profile, and the capacity of self-organizing trade dynamics by its merchant communities and financial agents.

47 A few key ideas can help to put forward new arguments. The Early Modern Age (15th to 18th centuries) witnessed significant developments and changes in the ranking of several European ports in the port system and hierarchy. It seems consensual that the dominance of seaports shifted from the Mediterranean world (particularly Genoa and Venice) to ports related to overseas trade and empires, first in the Iberian world (Lisbon and Seville), and in Northern Europe (Antwerp, Amsterdam, Hamburg, London).³⁰ The dominance of all these seaports seems directly related to trade complexes and networks which go beyond the European circuits. They involve colonial trade circuits, such as the Portuguese and Spanish circuits to the Atlantic world, including America; and oriental routes, in the Portuguese case, oriented to the Indian Ocean, the Middle East and the Far East (via the Red Sea and the Eastern Mediterranean, during the late Middle Ages).

48 Transatlantic trade started as a relatively small scale affair in the sixteenth century, and grew during the following century with the profits of a colonial economy based on several tropical commodities (tobacco, tea, coffee, chocolate and sugar) and textile products (cotton). A classic survey of these developments by Pieter Emmer³¹ points out the existence of two "Atlantic Systems." Iberians created the first, and Dutch, British and French the second. The latter

produced a new type of colonial system that did not exist elsewhere: the plantation islands, and created a market of slaves, provisions and equipments marked by international competition. In the author's opinion, it was only in the eighteenth century, at the end of the Early Modern period, that the integrated transatlantic economy attained its fullest articulation around the demand for colonial products that were transformed in Western Europe by European industries.³² This model sustains and explains the previous hierarchy as upheld by Wallerstein and other classic approaches.

49 However, we stand that the success of a seaport does not depend only on its status as a center of overseas traffic or as a platform for incoming colonial merchandise, including precious metals. In the first place, overseas trade does not occur without access to some key products from the European market itself. Ports only make sense when set firmly within the economic fabric of their country, region, and overseas connections. So, even though the potential of the empire is important, its complementarities with the domestic economy and, thus, with an extended *hinterland*, is also vital.³³

50 It is undeniable that in the last few decades, Early Modern European historiography has largely focused on the analysis of port systems and seaport networks, paying particular attention to the transoceanic traffic system. This perspective is based on a theoretical conception of the existence of international seaport hierarchies and accordingly tends to be centered on a macro-analysis. This type of approach underrates or even disregards the study of the internal dynamics and specific standing of each seaport related to its hinterland.

51 Even though the geography of maritime scales insists on the international dimension of the European market, regional and interregional dimensions must be taken into account.³⁴ From the 18th century, transport networks involving the coastline and the interior were consolidated, some making use of the waterways as routes for shipping goods and supplying regional subareas. From this perspective, seaports can also be seen as centers of economic growth for an extended *hinterland*. On the one hand, it depends on it, but it has also resulted from it, on the other. It is hence important to study these local and regional interactions to better understand seaports as central points within a system.

52 European economic agents seemed to be aware of this link: in the eighteenth century, the British merchants became increasingly interested in the economic production and potential of the *hinterland*. The same phenomenon took place in the Portuguese merchant community of Porto, specialized in connections with the Douro hinterland and the Porto wine-producing region.³⁵ This is also one of the reasons, as we see it, behind the central standing of Antwerp, in the first place, and then Amsterdam, in the European seaport hierarchy during the period under analysis. These seaports connected the arrival of overseas and colonial products, such as oriental spices, sugar from Brazil and the Antilles, wood, tobacco, cacao and even American silver, with the Baltic trade of grain and wood, and the industrial textile markets of northern Europe. They concentrated financial skills and logistics that made larger economic operations available.

53 The emergence and maintenance of a seaport as economic center also depends on its capacity to develop local industries, supply colonies with metropolitan products as well as transform colonial goods, in tobacco factories or cotton industries, for instance. This perspective explains the pattern of activities of Glasgow, Liverpool and London, where re-exports of colonial

products to other ports in Europe yielded fortunes which could in turn be used to buy essential goods, especially metals, fibers, wine, salt and wood for shipbuilding. In these ports, colonial trade also boosted the development of manufacturing industries, that manufactured goods for the colonies, or were involved in transforming colonial goods, like tobacco, such in Glasgow.³⁶

54 On the contrary, Lisbon and Seville were monopolistic platforms centered on the importation of colonial products and considered as major seaports by European standards according to their population rates, harbor logistics, services, significant foreign merchant community and administrative structures. Nevertheless, both never became centers of world economy and focus of industrialization and overall economic development. The question here is why Portugal and Spain did not enjoy the same economic development as Northern Europe. Why did not the Iberian maritime expansion bring structural changes to the internal economy of Portugal and Spain? Did it have to do with the failure of its leading ports, the lack of suitable *hinterlands* or their political status? One can question their lack of entrepreneurial skills or active economic strategy, in which surplus mercantile capital could be invested, especially in the 18th century, in the context of industrialization. What is the weight of the traditional explanation that capital was used for high lifestyle standards rather than for productive economic investments? Could only new trade enterprises produce high wealth rates if mercantile surpluses were invested in more productive schemes than building palaces or supporting royal families, the traditional hypothesis that supports the explanations of Portuguese failure in the world business? Does it mean that the success of local, regional and supra-regional economic dynamics depends equally, if not more, on human initiatives and capacity to build networks able to support successful businesses?

55 Answers to these questions depend on the inclusion of social variables in the enquire and on focusing on individual initiative and group performances. A recent transdisciplinary and international research project, DynCoopNet (Dynamic Complexity of Cooperation-Based Self-Organizing Commercial Networks in the First Global Age),³⁷ sustains that, in the First Global Age (fourteenth to eighteenth centuries), the world economy was increasingly characterized by widespread collaboration across the boundaries of companies and countries, and made possible by new means of global communication and the built of trade networks, frequently multinational. The project is based on primary assumptions:

- Cooperation tied together the self-organizing commercial networks of the first global age (1400-1800);
- The world economy of the first global age (1400-1800) was a dynamic, open, complex, non-linear system;
- The history of any place within this world economy cannot be understood without examining the way it was connected to other locations and to the system as a whole;
- Variations among geographic locations constitute an aspect of the system's complexity.³⁸

56 Some of the main theoretical assumptions may have, potentially, important implications on the subject at stake.

- The cooperation-based self-organizing networks were characterized by a diffusion of authority and frequently by-passed the segmented political hierarchies characteristic of governments in that period;

- These cooperation-based networks were necessary sources of creativity and innovation to respond in a flexible manner to the era's endemic disruptions to commodity, information, and capital flows occasioned by wars, disease epidemics, arbitrary government action, or natural disasters, and transportation problems associated with weather, distance, energy costs, and available technologies;
- There were significant variations in cooperative behaviors, which were shaped by cultural information and institutions specific to a place, and by its geographic position within the webs of circuits used by commercial networks.³⁹

57 These theoretical approaches are sustained by a convergence of methodologies unusual in the historical social sciences, like the use of GIS methods (Geographical Information Sciences) and mathematical modeling, in order to reveal the mechanisms of cooperation that allowed merchants and others to establish and sustain these often long-distance trading networks.

58 These theoretical insights lead us to a major question already formulated: is it possible that a seaport precinct loses significance overtime, without losing centrality as economic center, considering its importance in the investment capacity and trade activity of its merchant community, acting in international networks?

59 This is the case of some Mediterranean European seaports, especially in the Italian maritime republics. As harbors, they had lost prominence and status as economic centers. In the Italian world of the fifteenth and sixteenth centuries, seaports seemed to have been neglected. Harbor investments were more governed by the challenges posed by the Turkish and Berber piracy attacks than by business and trade.⁴⁰ However, the capital, maritime mastery and economic and financial agents of these maritime towns never lost their relevance in the world economy based on the Atlantic in the Early Modern Age, nor did Genoa or Venice lose their status as centers of wealth and economic development. Spanish imperial politics were open to them, providing them opportunities to participate in extended colonial circuits. At that time, at least one of these republics, Genoa, had been incorporated in the Spanish Empire, as a consequence of the Italian Wars. Studies centered on the Cadiz merchant community and businessmen in the eighteenth century stress the importance of merchant and capitalist networks in which Italian, as well as Flemish and German agents, were central.⁴¹ The historiography of the Spanish empire highlights their prevalence in the preceding centuries. It stresses the central role of the Fugger or the Italian bankers during the reign of Charles V, as well as the losses they suffered with the repeated bankruptcies of the Habsburg Empire.⁴²

60 In the Italian case, although Spain maintained military dominance over its territories and republics, its capital and economic agents prevailed in the overseas Spanish economy, as well as in the world economy, in which Spanish silver played a relevant role. This seems to be also the case of the Portuguese empire. Italian agents participated, from the very outset, to the voyages of exploration and discovery. Italian merchants, companies and bankers were also involved in the overseas trade circuits, credit and financial operations. They were indeed one of the largest and most privileged foreign communities in Lisbon.⁴³

61 In fact, even though Italian seaports lost centrality in the Atlantic trade complex, their merchants, bankers and capital maintained a vital position in

the world economy despite the marginalization of their seaports. The loss of importance of some seaports does not correspond, thus, to a decline in the status of their trade community as agents of economic participation.

62 If we focus, again, on the Portuguese case, we may bring similar conclusions about capital and trade agents movements: researches developed on Portuguese seaports, namely Vila do Conde,⁴⁴ Porto,⁴⁵ Lisboa and Viana do Castelo⁴⁶ proved that some ports of the kingdom were revitalized by commercial capital coming from financial investments from other merchant ports and communities. As a result of opportunistic circumstances and strategies at work, the latter relocated business transactions to certain ports to the detriment of others.

63 These strategies were documented for Vila do Conde⁴⁷ in the first decades of the 17th century, in connection with the new Christian merchant community of Porto.⁴⁸ In the port of Viana do Castelo,⁴⁹ import trade of Brazilian sugar was probably sustained by commercial partnerships, involving merchants and capital from Lisbon, taking advantage of a clearly beneficial customs tax system. It was also easier here to evade the embargoes imposed by the Philippine monarchy on ships and economic agents from the United Provinces, who were the traditional trade partners of Portugal, especially in the Brazilian sugar traffic.⁵⁰

64 This strategy implies the existence of internal migrations of commercial agents, transfer of capitals and merchant networks among the different maritime locations. This perspective dilutes the pyramidal seaport hierarchical order, which was the traditional perspective when analyzing seaport dynamics. The key for understanding this alternate prominence of some Portuguese seaports related to the particular traffic of Brazilian sugar, seems, thus, to be related to merchant and financial networks, rather than to an effective loss of importance of Lisbon as a central port. Does this mean that the answer to understand seaports sustainability and development is based on economic agents and entrepreneurial initiatives rather than on economic policies, administrative status, seaport structures or the cargo capacity of a seaport?

65 Until now, ports were presented as centers of economic and demographic dynamics, but seaports are also harbors. Harbor construction and technical infrastructural investments should be studied in order to ascertain if the logistics and infrastructural apparatus of a seaport should be considered as an indicator or as a factor of development. Or if, conversely, the infrastructural transformations of seaports were, at least in some cases, a result of central power decisions and political strategies rather than dictated by the real needs and internal dynamics of each port. Some case studies, developed in England,⁵¹ Spain⁵² and France,⁵³ referring mostly to the eighteenth and nineteenth centuries could sustain this last thesis.

66 Portugal, for instance, was confronted with demands for a better defense system: in the sixteenth century, because of the piracy and privateering attacks on its coasts, and, in the seventeenth and eighteenth centuries, from 1640 onwards, and later on from 1762, and especially after the 1793 French-Iberian Wars. These political contexts were responsible for the improvement of coastal defense infrastructures and promoted topographical surveys, as direct results of major developments in the field of maritime engineering. Framed by a scenario of war, with the Seven years war (1756-1763), the American Independence War (1776-1783) and the French revolutionary wars (1793-1801), Portugal opened up to new opportunities, strategically positioned as it was within the Atlantic complex, connected with North (United States) and South

America (Brazil). This clearly justified the construction of strategic port connections and port logistic supports and was not necessarily based on economic reasons.

67 In fact, economic conditions were not always the main reason behind the rebuilding of port precincts and harbors. Interventions in the construction of ports were very often the consequence of State control,⁵⁴ and were determined by the need for levying taxes, the defense of coastal areas –especially in times of war at sea, like during the Continental blockade– or even in the context of smuggling control.⁵⁵ Besides, some of the seaports that benefitted from important works of engineering, at times for specific purposes, handled low rates of general cargo. Many investments can even be considered as a waste of funds that could have been better applied elsewhere.⁵⁶ In this case, only a political strategy for seaports and harbours can explain some of the measures taken in Portugal.

68 The distribution pattern of harbor works over time, drawn from the *Hisportos* databases,⁵⁷ built on documental references about Northwestern Portuguese seaports constructions and technical interventions, proved itself useful as an approach to this issue.⁵⁸ The evolution of infrastructural investments analyzed in the long term (sixteenth to eighteenth centuries) seems to determine the irreversible loss of significance and economic capability of the smaller ports of Northwest Portugal. This phenomenon benefited to Porto, in spite of its serious accessibility problems, largely determined by its geomorphologic constraints.

69 The case of Aveiro explains another dimension of seaport construction. Porto dominated the national and international portuary wine trade in the eighteenth century. The Douro River and the entrance of the Douro harbor are pivotal factors at a regional and international level, that facilitated the connection with regional and international markets. The development of its port logistic and the concern with the viability of its maritime access are, in this context, understandable and justified. But Aveiro suffered, at that time, from a decline in the salt trade, its traditional trade basis. No other product appeared to substitute it, whereas the seaport presented serious geomorphologic problems. Nevertheless, between 1759 (when the port was first closed) and 1808 (date of the definitive settlement of the port), a long list of military engineers (Portuguese, German, French and Italian) passed through Aveiro.⁵⁹ Structural interventions, applied to Aveiro seaport precinct, were a construction, based on central policies and local lobbies, rather than on promising local or even regional economic dynamics. The construction of the port of Aveiro, during the eighteenth and nineteenth centuries, seems to be based on theoretical assumptions and technical experiences rather than on its national or international relevance or even on its local or regional dynamism.⁶⁰

70 During the eighteenth century, state policies led, to seaport investments in Portugal, which reasons go far beyond economic dynamics of each port. A very different picture is available in historiographical approaches of the British or Scottish cases,⁶¹ for instance, depending, among other variables, on the kind of jurisdiction carried on each seaport. This is another indicator to be applied, case-by-case.

71 On the other hand, in the period between the 17th and the 19th centuries, military agents, namely military engineers produced, in a large extent, scientific knowledge, associated to technological knowledge. Improvements were made in engineering, notably in the 18th century, at the same time as royal authorities were awoken to the importance of investing in infrastructures.

Technological knowledge, associated with conception, construction or maintenance of infrastructures, for defense purpose, or commercial and logistic aims, was in that period an essential element to territorial planning and organization of European states. Seaport areas frequently assimilated several dimensions of technological knowledge, in the domain of defense infrastructures (bulwarks, fortifications or castles), or in the anchorage and signaling infrastructures (wharves, levees, thick walls, beacons of sea, lighthouses ...).

72 The production of knowledge and representations related to these areas underscores this impetus. Navigation requirements and infrastructure interventions both led to the production of maps, especially in the 18th century, as well as intervention plans, accessibility studies and hydraulic engineering schemes. All these provide the Early Modern Age historian with an increasingly accurate picture of the situation at the time. Both cultural factors and reforms resulting from the Enlightenment were responsible for a clearer understanding of the world and, thus, of the coast. This understanding was associated with the growing need of land planning, which constituted an incentive for cartography and statistics.

73 In this context, the analysis of the activity of hydraulics engineering between the seventeenth and nineteenth centuries, the reconstitution of biographies of engineers, the analysis of the transference of techniques and knowledge resulting from their mobility all over Europe, should emerge, as well, as a main topic of research. It would allow to ascertaining if this circulation of technicians and technology in maritime spaces appears, in any level, as an agent of “globalization” of scientific knowledge, technology and seaport models all over Europe.

74 Understanding the application and the implications of technological innovations, associated with hydraulic engineering; the production of scientific knowledge of the territory (cartography, topography, hydrologic plans) stands, thus, as a priority in what regards seaport studies. A complex and realistic model of seaport studies could not dispense this approach, as well as others, associated with it. Urban planning of seaport cities, dealing with the centrality or the eccentricity of the harbor in the global dynamics of an urban setup; and geo-morphological coastal features through their interaction with historical dynamics, are two more aspects to be considered. If there is no determinism in this last domain, we have to be aware of the inventive and complex or simple ways men operate to take over geographic and geomorphologic constraints. Nevertheless, we cannot as well underestimate the importance of geomorphologic features on the evolving standing of a seaport on a system or a seaport net.

75 Multidisciplinary teams and interdisciplinary methodology, involving History, Demography, Economy, Sociology, Geomorphology, Climatology, Coastal Planning, Topography and Urbanism, and Hydraulics Engineering are, thus, the key answer to the present and future challenges in the field of seaport studies.

Notes

1 Richard W. Unger, “Shipping and Western European Economic Growth in the Late Renaissance: Potential Connections”, *International Journal of Maritime History*, XVIII, 2, 2006, p. 85-104.

- 2 About the concept of seaport city see Fernando Monge, Margarita del Olmo, “Un contexto de análisis para el concepto de ciudad portuaria: las ciudades americanas en el Atlántico”, *Puertos y Sistemas Portuarios (Siglos XVI-XX)*, Madrid, 1996, p. 215-233.
- 3 Amélia Polónia, “Hisportos – A research Project on Portuguese Seaports in the Early Modern Age”, *European Seaport Systems in the Early Modern Age - a comparative approach. International workshop. Proceedings. Porto-21/22 October 2005*, Porto, IHM-UP, 2007, p. 28-40.
- 4 Helena Osswald and Inês Amorim, “The Hisportos case. Scientific options and research programme. A possible approach to NW Portuguese seaport studies”, *European Seaport Systems in the Early Modern Age ...*, p. 57.
- 5 Gordon Jackson, “Early Modern European Seaports Studies: Highlights and Guidelines”, *European Seaport Systems in the Early Modern Age...*, p. 8.
- 6 Agustín Guimerá and Dolores Romero (coord.), *Puertos y sistemas portuarios (siglos XVI-XX): actas del Coloquio Internacional el Sistema Portuario Español: Madrid, 19-21 octubre, 1995*, Madrid, Ministerio de Fomento/ Centro de Estudios y Experimentación de Obras Públicas / CEDEX, 1996; Agustín Guimerá, “Puertos y Ciudades Portuarias (Ss. XVI-XVIII): una Aproximación Metodológica”, *O Litoral em perspectiva Histórica. Séculos XVI-XVIII. Um ponto da situação historiográfica*. Actas, Porto, FLUP/IHM-UP, 2002, p. 291. We are aware of the existence of resistances to apply the concept of system to seaport connections in a regional, European or even international level. The words of Gordon Jackson synthesize pertinent insights of this issue: “I am still not clear how we should deal with the subject of Port Systems, and particularly international systems. What is a ‘Port System’? Indeed, what is a ‘System’? The Standard *Oxford English Dictionary* offers three definitions: (a) ‘An organized or connected group of objects’ which British ports were certainly not. Apart from a very brief period after WWII nobody has ever tried to organize British ports. (b) ‘A whole composed of parts in orderly arrangement according to a plan’, which again is laughable in the British context; and (c) ‘A set of things connected, or interdependent, so as to form a complex unity’, a definition which might just reflect reality. [...] My own studies of port development over time would certainly support only the last definition.” Gordon Jackson, “Early Modern European Studies: Highlights and Guidelines”, *op. cit.*, p. 22-23.
- 7 Gordon Jackson, “The Significance of Unimportant Ports”, *International Journal of Maritime History*, XIII, n° 2, December 2001, p. 6.
- 8 Amélia Polónia, “Northwest Portuguese seaport system in the Early Modern Age”, *op. cit.*, p. 113-136.
- 9 As it was infrequently calculated, it is presented as being an useful index. Adrian Jarvis, “Port History: some thoughts on where it came from and where it might be going”, L. R. Fisher and Adrian Jarvis (eds.), *Harbours and Havens: Essays in Port History in Honour of Gordon Jackson*, Newfoundland, International Maritime Economic History Association, Research in Maritime History, series n° 16, 1999, p. 22.
- 10 See, on this topic, Amélia Polónia, “The Northwestern Portuguese Seaport System in the Early Modern Age”, *op. cit.*
- 11 See Margrit Schulte Beerbühl and Jörg Vögele (eds.), *Spinning the Commercial Web. International Trade, Mercantile and Commercial Cities, c. 1640-1939*, Frankfurt am Main, Peter Lang, 2004, p. 247-376.
- 12 The Portuguese Northwestern port system case study seems to prove the importance of these regional connections. Amélia Polónia, “The Northwestern Portuguese Seaport System in the Early Modern Age”, *op. cit.*
- 13 Amélia Polónia, *Expansão e Descobrimientos numa perspectiva local. O porto de Vila do Conde no século XVI*, Lisboa, INCM, 2007, vol. 1, p. 413-466.
- 14 “Amsterdam’s natural trans-regional hinterland followed the course of the international rivers deep into the German states, northwards, via the North Sea, to Scandinavia, and towards the South of the Republic, to the Spanish Netherlands. As a result, both the German states and Scandinavia provided Amsterdam with its work force. This work force, mainly responsible for the explosive demographic growth of the city, was driven away from their homes by war or the expectation of earning a better living.” Cátia Antunes, “Population growth, infrastructural development and economic growth: Amsterdam and Lisbon in the 17th century – a comparison”, *European Seaport Systems in the early modern age ...*, *op. cit.*, p. 115-130. See as well Paul Van Royen, Japp Brujin and Jan Lucassen (eds.), *Those Emblems of Hell? European Sailors and the Maritime Labour Market, 1570-1870*, Research in Maritime History, n° 13, Newfoundland, International Maritime Economic Association, 1997.

- 15 Leonor Freire Costa, *Naus e galeões na Ribeira de Lisboa. A construção naval no século XVI para a Rota do Cabo*, Cascais, Patrimonia, 1997.
- 16 Amélia Polónia, *Expansão e Descobrimientos numa perspectiva local*, vol. 1, p. 319-342, p. 365-390; Amélia Polónia, “O Porto nas navegações ultramarinas quinhentistas. Embarcações e náuticos”, *Revista da Faculdade de Letras. História*, 3^a Série, vol. 1, 2000, p. 29-52.
- 17 The concept of hinterlands (trans-regional and trans-continental) as we put it forward here, poses a contradiction with the arguments presented by medievalists, for instance. According to the latter, hinterlands are, by definition, rural. What Early Modernists propose is an inclusion of all the spaces surrounding the cities that may be in contact with the urban centre, therefore, including surrounding spaces such as other (usually smaller) cities and towns. Cátia Antunes, “Population growth, infrastructural development and economic growth”, *op. cit.*, p. 121-125.
- 18 Antonio García-Baquero González, *La carrera de Indias: suma de la contratación y océano de negocios*, Sevilla, Algaida, 1992.
- 19 We appealed to some suggestions on these matters in order to present the actual model. See, for instance, Gordon Jackson, “Early Modern European Studies: Highlights and Guidelines”, *op. cit.*, p. 23-24. The author underlines the importance of some elements on the study of ports: 1. their hinterland; 2. their purpose; 3. their people; 4. their shipping; 5. their financial capability; 6. their port based industries; 7. their national support; 8. their port facilities; 9. their social life.
- 20 Against some expectations, the recent book of a historical geographer disregards almost totally this focus, investing mostly in the analysis of Iberian seaports as economic and trade centres. Cf. Patrik O’Flanagan, *Port Cities of Atlantic Iberia, c. 1500-1900*, Burlington, Ashgate, 2008.
- 21 Guy Saupin, *Nantes au XVII^e siècle. Vie politique et société urbaine*, Rennes, Presses Universitaires de Rennes, 1996; Guy Saupin and Jean-Luc Sarrazin (eds.), *Économie et société dans la France de l’Ouest atlantique. Du Moyen Âge aux Temps Modernes*, Rennes, Presses Universitaires de Rennes, 2004; Guy Saupin (ed.), *Villes Atlantique dans l’Europe Occidentale du Moyen Âge au XX^e siècle*, Rennes, Presses Universitaires de Rennes, 2006; Armel de Wismes, *La vie quotidienne dans les ports bretons aux XVII^e et XVIII^e siècles. Nantes, Brest, Saint Malo, Lorient*, Paris, Hachette, 1973; Jacques Bernard, *Navires et gens de mer à Bordeaux (vers 1400-1500)*, 3 vol., Paris, SEVPEN, 1968; Alain Cabantous, *La mer et les hommes. Pêcheurs et matelots dunkerquois de Louis XIV à la Revolution*, Dunkerque, s.n., 1980; Alain Cabantous, *Dix mille marins face à l’océan. Les populations maritimes de Dunkerque au Havre aux XVII^e et XVIII^e siècles (vers 1660-1794). Étude sociale*, Paris, Publisud, 1991.
- 22 Silvia Marzagalli, “Hamburg 1750-1850. L’adaptation d’une ville au changement de l’activité portuaire”, Josette Pontet (ed.), *Les hommes et les pouvoirs dans la ville. XVI^e-XX^e siècles. France, Allemagne, Angleterre, Italie*, Bordeaux, CESUB-Histoire, Université Michel de Montaigne – Bordeaux III, 2000, p. 89-115. Cf. Amélia Polónia, “Seaports as centres of economic growth ...”, *op. cit.*
- 23 Susan Migden Socolow (ed.), *The Atlantic Staple Trade*, vol. 1: *Commerce and Politics*, London, Variorum, 1996, p. XX.
- 24 Silvia Marzagalli, *Les boulevards de la fraude. Le négoce et le Blocus Continental. 1806-1813. Bordeaux, Hambourg, Livourne*, Paris, Presses Universitaires du Septentrion, 1999; Silvia Marzagalli, “L’application du Blocus Continental ou l’impossible contrôle des populations du littoral, à l’époque du premier empire”, in *Pouvoirs et littoraux. XV^e-XX^e siècles*, *op. cit.*, p. 395-408.
- 25 Teresa Rodrigues, “Um espaço económico em expansão. Da Lisboa de Quinhentos a Lisboa do século XX”, *Penélope. Fazer e desfazer a história*, 13, 1994, p. 95-117.
- 26 Amélia Polónia, “The Northwestern Portuguese Seaport System in the Early Modern Age”, *op. cit.*
- 27 Jacob M. Price, “Competition between ports in British long distance trade”, Agustín Guimera and Dolores Romero (eds.), *Puertos y sistemas portuarios (siglos XVI-XX): actas del Coloquio Internacional el Sistema Portuario Español: Madrid, 19-21 octubre, 1995*, Madrid, 1996, p. 26.
- 28 Gordon Jackson, “Early Modern European Seaports Studies”, *op. cit.*, p. 13; Sarah Palmer, “The eighteenth ports of London and Liverpool. Private versus corporate promotion”, Simonetta Cavaciochi (ed.), *I porti come impresa economica: atti della*

- Diciannovesima Settimana di studi, 2-6 maggio 1987*, Firenze, Le Monnier, 1988, p. 382-397.
- 29 We appeal to some questions put forward by Gordon Jackson in a debate held at the workshop *European Seaport Systems in the early modern age - a comparative approach* (Porto, 21-22 October 2005).
- 30 See, among others, Immanuel Wallerstein, *O sistema mundial moderno*, Porto, Edições Afrontamento, 1990, vol. 2: *O mercantilismo e a consolidação da economia-mundo europeia. 1600-1750*.
- 31 Pieter Emmer, *The Dutch in the Atlantic Economy, 1580-1880. Trade, Slavery, and Emancipation*, London, Ashgate, 1998.
- 32 John McCusker and Kenneth Morgan (eds), *The Early Modern Atlantic Economy*, Cambridge, Cambridge University Press, 2000, p. 1-12.
- 33 James Bird, "Seaport as a subset of gateways for regions. A research survey", *Progress in Human geography*, 4, 1989, p. 360-370; James Bird, "Seaport development: some questions of scale", B. S. Hoyle and D. Hilling (eds), *Seaport systems and spatial change*, London, 1984, p. 21-41; James Bird, *The Major Seaports of the U.K.*, London, 1963, mostly chapter 1 – *The development of Anyport*; Gordon Jackson, "The Maritime Experience of a Region without Ports: Argyll, Scotland, c.1740-1840", *International Journal of Maritime History*, XVII, 2, December 2005, p. 1-18. International meetings also promote discussion on this topic. See, for instance, the International Workshop: *Port-Cities and their Hinterlands. Migration, Trade and Cultural Exchange*, promoted by the Centre for Port and Maritime History - University of Liverpool, held in Liverpool, 7-8 December 2007; Gerard Le Bouedec, "Économie atlantique et profil des villes ports en Europe (XVII^e-XIX^e siècles)", Guy Saupin (dir.), *Villes Atlantiques dans l'Europe occidentale du Moyen Âge au XX^e siècle*, Rennes, Presses Universitaires de Rennes, 2006, p. 45-56.
- 34 Amélia Polónia, "Hisportos – A research Project on Portuguese Seaports in the Early Modern Age", *European Seaport Systems in the early modern age - a comparative approach. International workshop. Proceedings. Porto-21/22 October 2005*, Porto, IHM-UP, 2007, p. 28-39; and Amélia Polónia and Inês Amorim, "Hisportos – Contribuição para o estudo dos portos do Noroeste português. Apresentação de um projecto de investigação", paper presented at the 13th AHILA International Congress, *Simpose Microhistória em Hispanoamérica: Metodologias, Temas e Linhas de Investigação. As migalhas e a pluralidad*, Ponta Delgada, September 3-8, 2002.
- 35 António Barros Cardoso, *Baco & Hermes. O Porto e o comércio interno e externo dos vinhos do Douro (1700-1756)*, 2 vol., Porto, 2003.
- 36 T. M. Devine, *The Tobacco Lords, 1740-90*, Edinburgh, Edinburgh University Press, 1990; D. H. Sacks, *The Widening Gate: Bristol and the Atlantic Economy, 1450-1700*, Berkeley/Oxford, University of California Press, 1991; Gordon Jackson, "Sea Trade", J. Langton and R.J. Morris (eds.), *Atlas of Industrializing Britain, 1780-1914*, London, 1986, p. 94-106; Gordon Jackson, "Glasgow in Transition", T.M. Devine and G. Jackson (eds.), *Glasgow*, vol. I: *Beginnings to 1830*, Manchester, University Press, 1995; Henry Roseveare, "The damned combination: the Port of London and the wharfingers' cartel of 1695", *London Journal*, 21, 1996, p. 97-111; Henry Roseveare, "Wiggins' Key revisited: trade and shipping in the later seventeenth-century Port of London", *Journal of Transport History*, 3rd ser., 16, 1995, p. 1-20; Michael J. Power, "Politics and progress in Liverpool, 1660-1740", *Northern History*, 35, 1999, p. 119-38; Michael Power, "Creating a port: Liverpool 1695-1715", *Transactions of the Historic Society of Lancashire & Cheshire*, 149, 2000, p. 51-71; Diana E. Ascott, Fiona Lewis and Michael Power, *Liverpool 1660-1750: people, prosperity and power*, Liverpool, Liverpool University Press, 2006; Gordon Jackson, *The history and Archaeology of Ports*, Tadworth, World's Work, 1983; Kenneth Morgan, *Bristol and the Atlantic Trade in the Eighteenth Century*, Cambridge, Cambridge University Press, 1983.
- 37 DynCoopNet "Dynamic Complexity of Cooperation-Based Self-Organizing Commercial Networks in the First Global Age", approved by TECT ("The Evolution of Cooperation and Trading") – Program EUROCORES (European Collaborative Research) – European Science Foundation (Ref. 06-TECT-FP-004).
- 38 Extracted from DynCoopNet Proposal submitted to submitted to EUROCORES - TECT program (European Science Foundation)
- 39 *Id.*
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